

FIG. 1a



FIG. 1b

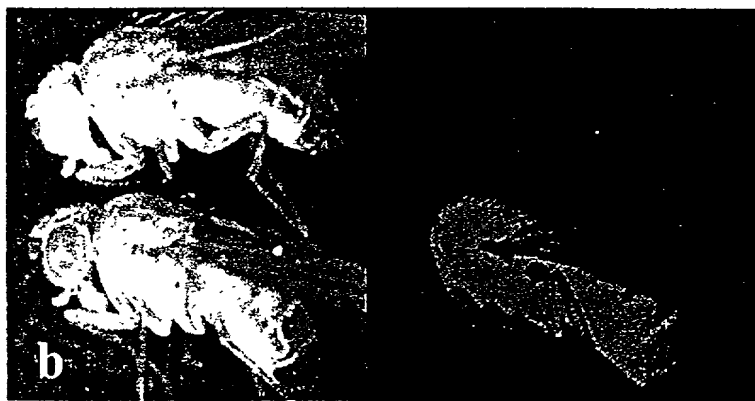


FIG. 1c



FIG. 2a

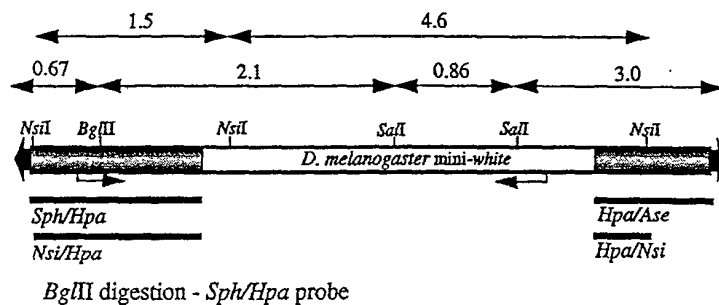
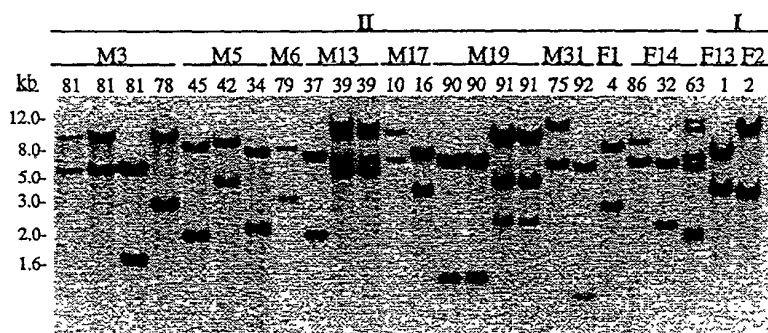
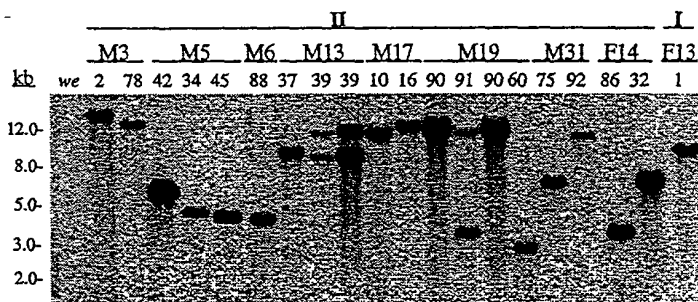


FIG. 2b



*Sa*II digestion - *Hpa*/*Ase* probe



*Nsi*I digestion - *Nsi*/*Hpa* + *Hpa*/*Nsi* probes

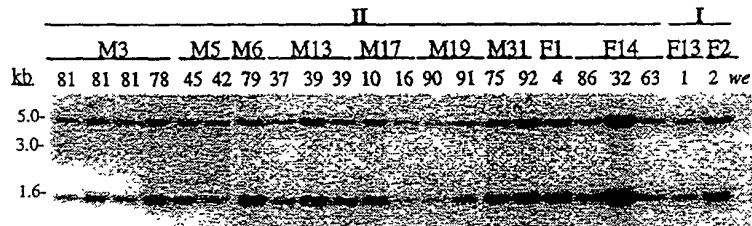


FIG. 2d

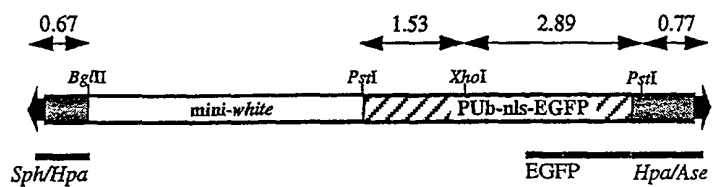


FIG. 3a

A- BglII digestion - Sph/Hpa probe B- XhoI digestion - Hpa/Ase probe

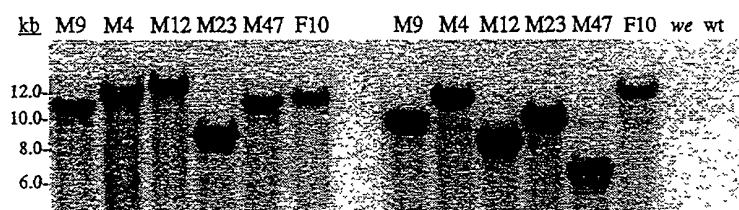


FIG. 3b

FIG. 3c

C- PstI digestion - Hpa/Ase+EGFP probe

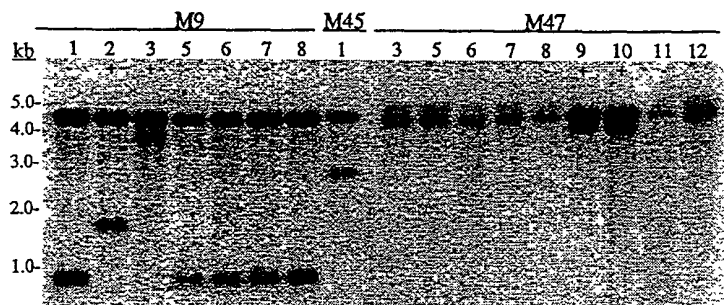


FIG. 3d



FIG. 4a

p3E1.2 aagcgcaaattcttttTTAA -*piggyBac*- TTAAataatagttttctaatt

F1-2 aaaaagactgactatTTAA -*piggyBac*- TTAAtaagcacactgagtc

M17-4 aaaatgtcgtctaggTTAA -*piggyBac*- TTAAagccgtatatcagat

M31-6 aaatgaacgactttttTTAA -*piggyBac*- TTAAtggttttttagttgt

FIG. 4b

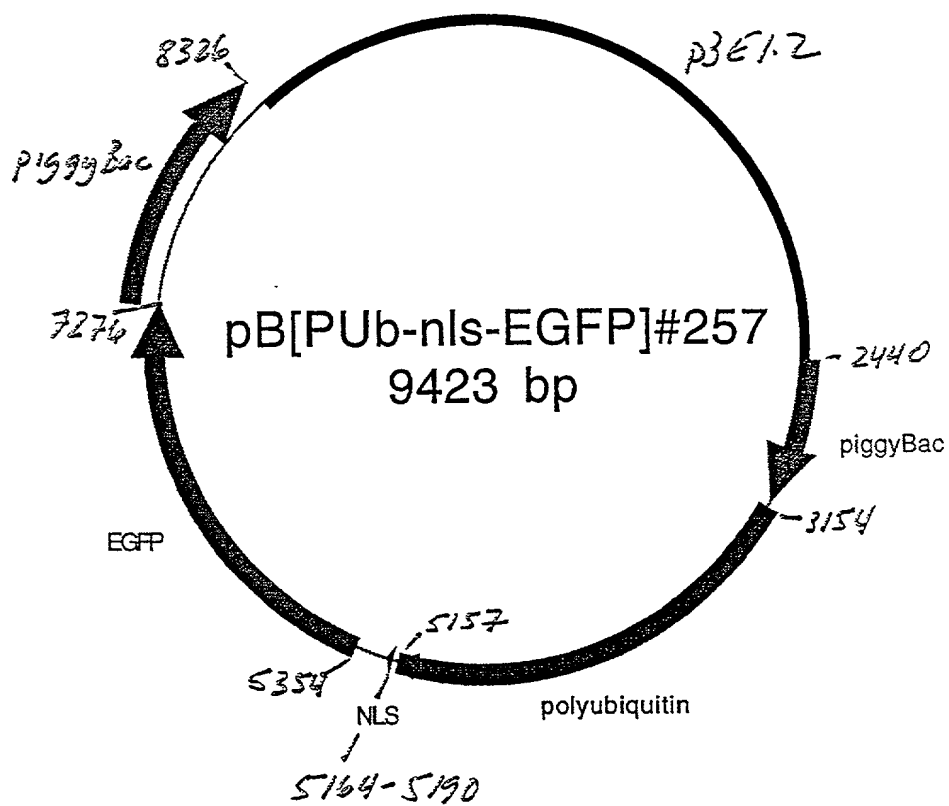


FIG. 5

10	20	30	40	50	
1234567890	1234567890	1234567890	1234567890	1234567890	
GACGAAAGGG	CCTCGTGATA	CGCCTATTTT	TATAGGTTAA	TGTCATGATA	50
ATAATGGTTT	CTTAGACGTC	AGGTGGCACT	TTTCGGGGAA	ATGTGCGCGG	100
AACCCCTATT	TGTTTATTTT	TCTAAATACA	TTCAAATATG	TATCCGCTCA	150
TGAGACAATA	ACCCTGATAA	ATGCTTCAAT	AATATTGAAA	AAGGAAGAGT	200
ATGAGTATTC	AACATTTCCG	TGTCGCCCTT	ATTCCCTTTT	TTGCGGCATT	250
TTGCTTCCT	GTTTTTGCTC	ACCCAGAAAC	GCTGGTGAAA	GTAAAAGATG	300
CTGAAGATCA	GTTGGGTGCA	CGAGTGGGTT	ACATCGAACT	GGATCTCAAC	350
AGCGGTAAAG	TCCTTGAGAG	TTTTCGCCCC	GAAGAACGTT	TTCCAATGAT	400
GAGCACTTTT	AAAGTTCTGC	TATGTGGCGC	GGTATTATCC	CGTATTGACG	450
CCGGGCAAGA	GCAACTCGGT	CGCCGCATAC	ACTATTCTCA	GAATGACTTG	500
GTGAGTACT	CACCACTCAC	AGAAAAGCAT	CTTACGGATG	GCATGACAGT	550
AAGAGAATT	TGCAGTGCTG	CCATAACCAT	GAGTGATAAC	ACTGCGGCCA	600
ACTTACTTCT	GACAACGATC	GGAGGACCGA	AGGAGCTAAC	CGCTTTTTTTG	650
CACAACATGG	GGGATCATGT	AACCTCGCCT	GATCGTTGGG	AACCGGAGCT	700
GAATGAAGCC	ATACCAAACG	ACGAGCGTGA	CACCACGATG	CCTGTAGCAA	750
TGGCAACAAC	GTTGCGCAAA	CTATTAACTG	GCGAACTACT	TACTCTAGCT	800
TCCCGGCAAC	AATTAATAGA	CTGGATGGAG	GCGGATAAAG	TTGCAGGACC	850
ACTTCTGCGC	TCGGCCCTTC	CGGCTGGCTG	GTTTATTGCT	GATAAATCTG	900
GAGCCGGTGA	GCGTGGGTCT	CGCGGTATCA	TTGCAGCACT	GGGGCCAGAT	950
GGTAAGCCCT	CCCGTATCGT	AGTTATCTAC	ACGACGGGGA	GTCAGGCAAC	1000
TATGGATGAA	CGAAATAGAC	AGATCGCTGA	GATAGGTGCC	TCACTGATT	1050
AGCATTGGTA	ACTGTCAGAC	CAAGTTTACT	CATATATACT	TTAGATTGAT	1100
TTAAAACTTC	ATTTTTAATT	TAAAAGGATC	TAGGTGAAGA	TCCTTTTTGA	1150
TAATCTCATG	ACCAAATCC	CTTAACGTGA	GTTTTCTGTC	CACCTGAGCGT	1200
CAGACCCCGT	AGAAAAGATC	AAAGGATCTT	CTTGAGATCC	TTTTTTTCTG	1250
CGCGTAATCT	GCTGCTTGCA	AACAAAAAAA	CCACCGCTAC	CAGCGGTGGT	1300
TTGTTTGCCG	GATCAAGAGC	TACCAACTCT	TTTTCCGAAG	GTAACTGGCT	1350
TCAGCAGAGC	GCAGATACCA	AATACTGTCC	TTCTAGTGTA	GCCGTAGTTA	1400
GGCCACCACT	TCAAGAACTC	TGTAGCAACG	CCTACATACC	TCGCTCTGCT	1450
AATCCTGTTA	CCAGTGGCTG	CTGCCAGTGG	CGATAAGTCC	TGCTCTACCG	1500
GGTTGGACTC	AAGACGATAG	TTACCGGATA	AGGCGCAGCG	GTCGGGCTGA	1550
ACGGGGGGTT	CGTGCACACA	GCCCAGCTTG	GAGCGAACGA	CCTACACCGA	1600
ACTGAGATAC	CTACAGCGTG	AGCATTGAGA	AAGCGCCACG	CTTCCCGAAG	1650
GGAGAAAGGC	GGACAGGTAT	CCGGTAAGCG	GCAGGGTCGG	AACAGGAGAG	1700
CGCACGAGGG	AGCTTCCAGG	GGGAAACGCC	TGGTATCTTT	ATAGTCCTGT	1750
CGGGTTTCGC	CACCTCTGAC	TTGAGCGTCG	ATTTTTGTGA	TGCTCGTCAG	1800

FIG. 6a

10	20	30	40	50	
1234567890	1234567890	1234567890	1234567890	1234567890	
TAAAAACAAA	TTTCACITTA	AAATGGATT	AGAAAAGCTT	GIGTAAGATT	3650
ATGCGCAGCG	TTGCCAGATA	GCTCCATTTA	AAACACTTCA	AAAACAATAA	3700
GTITTTGAAA	TATATACATA	AATAGCAGTC	GTGCGCGCAA	CGCTCAACAC	3750
ATCACACTTT	TAAAACACCC	TTTACCTACA	CAGAATTACT	TTTTAAATTT	3800
CCAGTCAAGC	TGCGAGTTTC	AAAATTATAG	CCGGTAGAGA	AGACAGTGCT	3850
ATTTCAAAAG	CAAATAAAT	AAACACCAAT	CCTAACAAGC	CTTGGACTTT	3900
TGTAAGTTTA	GATCAAAGGT	GGCATTGCAT	TCAATGTCAT	GGTAAGAAGT	3950
AGGTCGTCTA	GGTAGAAATC	CTCATTACAG	CGGTCAAGTC	AGTACGAGAA	4000
AGGTCCTCAAT	TTGAAATTGT	CTTAAAAATA	TTTTATTGTT	TTGTAAGTGT	4050
GTCAGTTTAA	ACGAAAAACA	CAAAAAAATA	GTGATACACA	GAAATCATAA	4100
AAAATTTTAA	TACAAGGIAT	TGCTACGIAT	CAAAAACATT	TCGGCACAAT	4150
TTTTTTTCTC	TGTAATAAAG	TGTTACGAAC	ACTACGGIAT	TTTTTAGTGA	4200
TTTTCAACGG	ACACCGAAGG	TATATAAACA	GCGTTGCGCA	ACGGTCGCTT	4250
TCAAAACCAA	TTGACATTTG	CAGCAGCAAG	TACAAGCAGA	AAGTAAAGCG	4300
CAATCAGCGA	AAAATTTTATA	CTTAATTGTT	GGTGAATTAA	GTACAATTAA	4350
AAGAACATTC	TCGAAAGTCA	CAAGAAACGT	AAGTTTTTAA	CTCGCTGTTA	4400
CCAATTAGTA	ATAAGAGCAA	CAAGACGTTG	AGTAATTTC	AGAAAACTG	4450
CATTTCAAGG	TCCTTGTTCG	GCCATTTTTT	TTTTATTCAA	CGCTCTACGT	4500
AATTACAAAA	TAAGAAATTG	GCAGCCACGC	ATCTTGTTTT	CCCAATCAAT	4550
TGGCATCAAA	ACGCAAACAA	ATCTATAAAT	AAAACCTGCG	TGTTGATTTT	4600
CGCCAAGATT	TATTGGCAAA	TTGTGAAATT	CGCAGTGACG	CATTTGAAAA	4650
TTTCGAGAAAT	CACGAACGCA	CTCGAGCATT	TGTGTGCATG	TTATTAGTTA	4700
GTTAGTTCTT	TGCTTAATTG	AAGTATTTTA	CCAACGAAAT	CCACTTATTT	4750
TTAGCTGAAA	TAGAGTAGGT	TGCTTGA AAC	GAAAGCCACG	TCTGGAAAAT	4800
TTCTTATTGC	TTAGTAGTTG	TGACGTCACC	ATATACACAC	AAAATAATGT	4850
GTATGCATGC	GTTCACGCTG	TGTATATATA	CATGCACACA	CTCGCATTAT	4900
GAAAACGATG	ACGAGCAACG	GAACAGGTTT	CTCAACTACC	TTTGTTCCTG	4950
TTTCTTCGCT	TTCTTTTGT	CCAATATTCT	TAGAGGGTTA	ATAGGGGTTT	5000
CTCAACAAAG	TTGGCGTCTG	TAAATAAGTT	TCCCATTTTT	ATTCCCCAGC	5050
CAGGAAGTTA	GTTCATATAG	TTTTGTAAAT	TCAACGAAAC	TCATTTGATT	5100
TCGTAATAAT	TTTCCACATC	TCTATTTTGA	CCCGCAGAAT	AATCCAAAAT	5150
GCAGATCGGG	GATCCCACCC	CACCCAAGAA	GAAGCGCAAG	GIGGAGGACG	5200
ATCCCGTCTG	TTTACAAAGT	CGTGACTGGG	AAAACCCCTG	CGTTACCCAA	5250
CTTAATCGCC	TTGCAGCACA	TCCCCCTTTC	GCCAGCTGGC	GTAATAGCGA	5300
AGAGGCCCGC	ACCGATCGCC	CTTCCCAACA	GTTCGGGTCT	ACTCTAGAGG	5350
ATCCCCGGGA	TCCACCGGTC	GCCACCATGG	TGAGCAAGGG	CGAGGAGCTG	5400

FIG. 6c

10	20	30	40	50	
1234567890	1234567890	1234567890	1234567890	1234567890	
TTCACCGGGG	TGGTGCCCAT	CCTGGTGGAG	CTGGACGGCG	ACGTAAACGG	5450
CCACAAGTTC	AGCGTGTCCG	GCGAGGGCGA	GGGCGATGCC	ACCTACGGCA	5500
AGCTGACCCCT	GAAGTTCATC	TGCACCAACCG	GCAAGCTGCC	CGTGCCCTGG	5550
CCCACCCCTCG	TGACCACCCCT	GACCTACGGC	GIGCAGTGGT	TCAGCCCGCTA	5600
CCCCGACCAC	ATGAAGCAGC	ACGACTTCTT	CAAGTCCGCC	ATGCCCCAAG	5650
GCTACGTCCA	GGAGCGCACC	ATCTTCTTCA	AGGACGACCG	CAACTACAAG	5700
ACCCGCGCCG	AGGTGAAGTT	CGAGGGCGAC	ACCCCTGGTGA	ACCGCATCGA	5750
GCTGAAGGGC	ATCGACTTCA	AGGAGGACCG	CAACATCCTG	GGGCACAAGC	5800
TGGAGTACAA	CTACAACAGC	CACAACGICT	ATATCATGGC	CGACAAGCAG	5850
AAGAACGGCA	TCAAGGTGAA	CTTCAAGATC	CGCCACAACA	TCGAGGACGG	5900
CAGCGTGCAG	CTCGCCGACC	ACTACCAGCA	GAACACCCCC	ATCGGCGACG	5950
GCCCCGTGGT	GCTGCCCCGAC	AACCACTACC	TGAGCACCCA	GTCCGCCCTG	6000
AGCAAAGACC	CCAACGAGAA	GCGCGATCAC	ATGGTCCTGC	TGGAGTTCGT	6050
GACCGCCGCC	GGGATCACTC	TCGGCATGGA	CGAGCTGTAC	AAGTAAAGCG	6100
GCCGCGACTC	TAGATCATAA	TCAGCCATAC	CACATTTGTA	GAGGTTTTTAC	6150
TTGCTTTTAAA	AAACCTCCCA	CACCTCCCCC	TGAACCTGAA	ACATAAAATG	6200
AATGCAATTG	TTGTTGTAA	CTTGTTTATT	GCAGCTTATA	ATGGTTACAA	6250
ATAAAGCAAT	AGCATCACAA	ATTTACACAA	TAAAGCATTT	TTTTCACTGC	6300
ATTCTAGTTG	TGGTTTGTCC	AAACTCATCA	ATGTATCTTA	AGGCGTAAAT	6350
TGTAAGCGTT	AATATTTTGT	TAAAATTCCG	GTTAAATTTT	TGTTAAATCA	6400
GCTCATTTTT	TAACCAATAG	GCCGAAATCG	GCAAAATCCC	TTATAAATCA	6450
AAAGAATAGA	CCGAGATAGG	GTGTAGTGT	GTCCAGTTT	GGAACAAGAG	6500
TCCACTATTA	AAGAACGTGG	ACTCCAACGT	CAAAGGGCGA	AAAACCGTCT	6550
ATCAGGGCGA	TGGCCCCACTA	CGTGAACCAT	CACCTAATC	AAGTTTTTTTG	6600
GGGTGAGGT	GCCGTAAAGC	ACTAAATCGG	AACCTTAAAG	GGAGCCCCCG	6650
ATTTAGAGCT	TGACGGGGAA	AGCCGGCGAA	CGTGGCGAGA	AAGGAAGGGA	6700
AGAAAGCGAA	AGGAGCGGGC	GCTAGGGCGC	TGGCAAGTGT	AGCGGTACG	6750
CTGCGCGTAA	CCACCACACC	CGCCGCGCTT	AATGCGCCGC	TACAGGGCGC	6800
GTCAGGTGGC	ACTTTTCCGG	GAAATGTGG	CGGAACCCCT	ATTTGTTTTAT	6850
TTTTCTAAAT	ACATTCAAAT	ATGTATCCGC	TCATGAGACA	ATAACCCCTGA	6900
TAAATGCTTC	AATAATATTG	AAAAAGGAAG	AGTCCTGAGG	CGGAAAGAAC	6950
CAGCTGTGGA	ATGTGTGTCA	GTTAGGGTGT	GGAAAGTCCC	CAGGCTCCCC	7000
AGCAGGCAGA	AGTATGCAAA	GCATGCATCT	CAATTAGTCA	GCAACCAGGT	7050
GTTGAAAGTC	CCCAGGCTCC	CCAGCAGGCA	GAAGTATGCA	AAGCATGCAT	7100
CTCAATTAGT	CAGCAACCAT	AGTCCCGCCC	CTAACTCCGC	CCATCCCGCC	7150
CCTAACTCCG	CCCAGTTCGG	CCCATTCCTC	GCCCCATGGC	TGACTAATTT	7200

FIG. 6d

10	20	30	40	50	
1234567890	1234567890	1234567890	1234567890	1234567890	
TTTTTATTTA	TGCAGAGGCC	GAGGCGGCGT	CGGCGTCTGA	GCTATTCCAG	7250
AAGTAGTGAG	GAGGCTTTTT	TGGAGGAACC	ATTGTGGGAA	CCGTGCGATC	7300
AAACAAACGC	GAGATACCGG	AAGTACTGAA	AAACAGTCGC	TCCAGGCCAG	7350
TGGGAACATC	GATGTTTTGT	TTTGACGGAC	CCCTTACTCT	CGTCTCATAT	7400
AAACCGAAGC	CAGCTAAGAT	GGTATACTTA	TTATCATCTT	GIGATGAGGA	7450
TGCTTCTATC	AACGAAAGTA	CCGGTAAACC	GCAAATGGTT	ATGTATTATA	7500
ATCAAATAAA	AGGCGGAGTG	GACACGCTAG	ACCAAATGIG	TTCGTGATG	7550
ACCTGCAGTA	GGAGACGAA	TAGGTGGCGT	ATGGCATTAT	TGTACGGAAT	7600
GATAAACATT	GCCTGCATAA	ATTCTTTTTAT	TATATACAGC	CATAATGTCA	7650
GTAGCAAGGG	AGAAAAGGTC	CAAAGTCGCA	AAAAATTTAT	GAGAAACCTT	7700
TACATGAGCC	TGACGTCATC	GTTTATGCGT	AAGCGTTTAG	AAGCTCCTAC	7750
TTTGAAGAGA	TATTTGCGCG	ATAATATCTC	TAATATTTTG	CCAAATGAAG	7800
TGCCTGGTAC	ATCAGATGAC	AGTACTGAAG	AGCCAGTAAT	GAAAAACGTT	7850
ACTTACTGTA	CTTACTGCCC	CTCTAAAATA	AGGCGAAAGG	CAAATGCATC	7900
GTGCAAAAAA	TGCAAAAAAG	TTATTTGTGCG	AGAGCATAAT	ATTGATATGT	7950
GCCAAAGTTG	TTTCTGACTG	ACTAATAAGT	ATAATTTGTT	TCTATTATGT	8000
ATAAGTTAAG	CTAATTACTT	ATTTTATAAT	ACAACATGAC	TGTTTTTAAA	8050
GTACAAAATA	AGTTTATTTT	TGTAAAAGAG	AGAATGTTTA	AAAGTTTTGT	8100
TACTTTATAG	AAGAAATTTT	GAGTTTTTGT	TTTTTTTTTAA	TAAATAAATA	8150
AACATAAATA	AATTGTTTGT	TGAATTTATT	ATTAGTATGT	AAGTGTAAT	8200
ATAATAAAAC	TTAATATCTA	TTCAAATTAA	TAAATAAACC	TCGATATACA	8250
GACCGATAAA	ACACATGCGT	CAATTTTACG	CATGATTATC	TTTAACGTAC	8300
GTACACAATAT	GATTATCTTT	CTAGGGTTAA	ATAATAGTTT	CTAATTTTTT	8350
TATTATTTCAG	CCTGCTGTGCG	TGAATAACGT	ATATCTCAAC	GCTGTCTGTG	8400
AGATTGTGCGT	ATTCTAGCGT	TTTTAGTTTT	TGGCTCATCG	ACTTGATATT	8450
GTCCGACACA	TTTTGCTGCG	TTTGCGTTTT	GATCAAAGAC	TTGAGCAGAG	8500
ACACGTTAAT	CAACTGTTC	AATTGATCCA	TATTAACGAT	ATCAACCCGA	8550
TGCGTATATG	GTGCGTAAAA	TATATTTTTT	AACCTCTTA	TACTTTGCAC	8600
TCTGCGTTAA	TACGCGTTGCG	TGTACAGACG	TAATCATGTT	TTCTTTTTTG	8650
GATAAACTC	CTACTGAGTT	TGACCTCATA	TTAGACCCCTC	ACAAGTTGCA	8700
AAACGTTGCA	TTTTTTTACCA	ATGAAGAATT	TAAAGTTATT	TTAAAAAATT	8750
TCATCACAGA	TTTAAAGAAG	AACCAAAAT	TAAATTATTT	CAACAGTTTA	8800
ATCGACCAGT	TAATCAACGT	GTACACAGAC	GCGTCGGCAA	AAAACACGCA	8850
GCCCGACGIG	TGGGCTAAAA	TTATTAAATC	AACTTGTGTT	ATAGTCACGG	8900
ATTTGCCGTC	CAACGTGTTC	CTCAAAAAGT	TGAAGACCAA	CAAGTTTACG	8950
GACACTATTA	ATTATTTGAT	TTTGCCCCAC	TTCATTTTGT	GGGATCACAA	9000

FIG. 6e

10	20	30	40	50	
1234567890	1234567890	1234567890	1234567890	1234567890	
TTTTGTTATA	TTTAAACAA	AGCTTGGCAC	TGGCCGTGCT	TTTACAACGT	9050
CGTGACTGGG	AAAACCCCTGG	CGTTACCCAA	CTTAATCGCC	TTGCAGCACA	9100
TCCCCCTTTC	GCCAGCTGGC	GTAATAGCGA	AGAGGCCCGC	ACCGATCGCC	9150
CTTCCCAACA	GTGCGCAGC	CTGAATGGCG	AATGGCGCCT	GATGCGGTAT	9200
TTTCTCCTTA	CGCATCTGTG	CGGTATTTCA	CACCGCATAT	GGTGCACTCT	9250
CAGTACAATC	TGCTCTGATG	CCGCATAGTT	AAGCCAGCCC	CGACACCCGC	9300
CAACACCCGC	TGACGCGCCC	TGAOGGGCTT	GTCTGCTCCC	GGCATCCGCT	9350
TACAGACAAG	CTGTGACCGT	CTCCGGGAGC	TGCATGTGTC	AGAGGTTTTTC	9400
ACCGTCATCA	CCGAAACGCG	CGA			9423

FIG. 6f

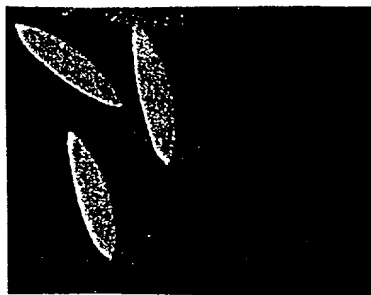


FIG. 7a

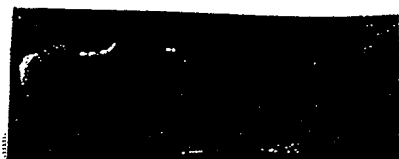


FIG. 7b



FIG. 7c



FIG. 7d



FIG. 7e



FIG. 8a



FIG. 8b



FIG. 8c

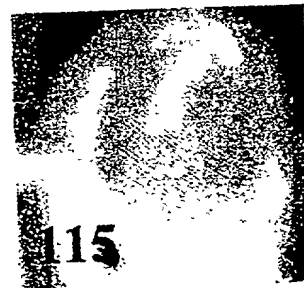


FIG. 8d

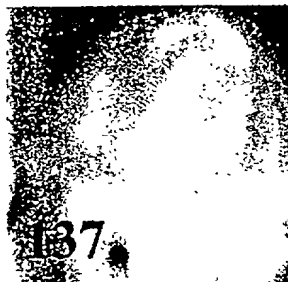


FIG. 8e



FIG. 9a



FIG. 9b

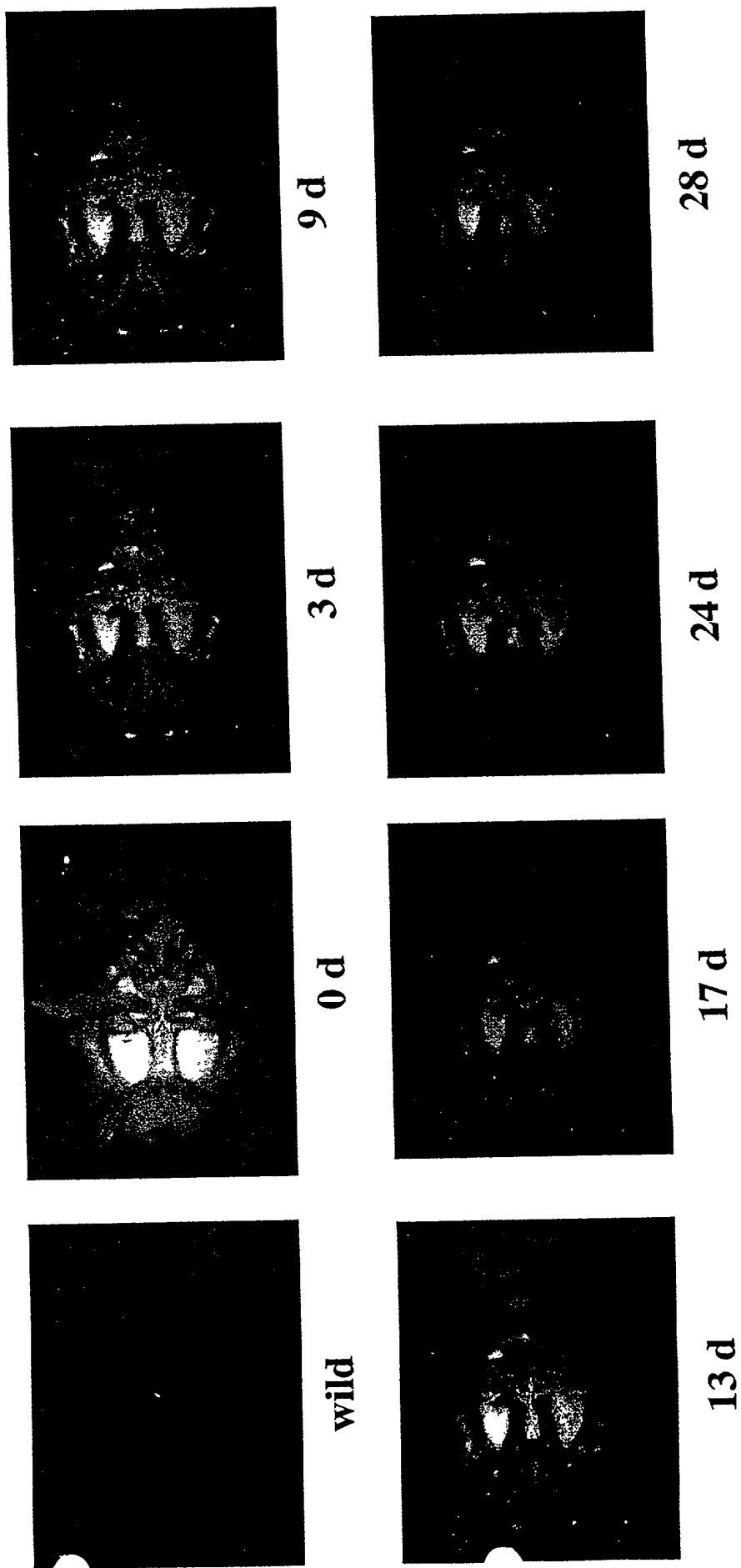


FIG. 10

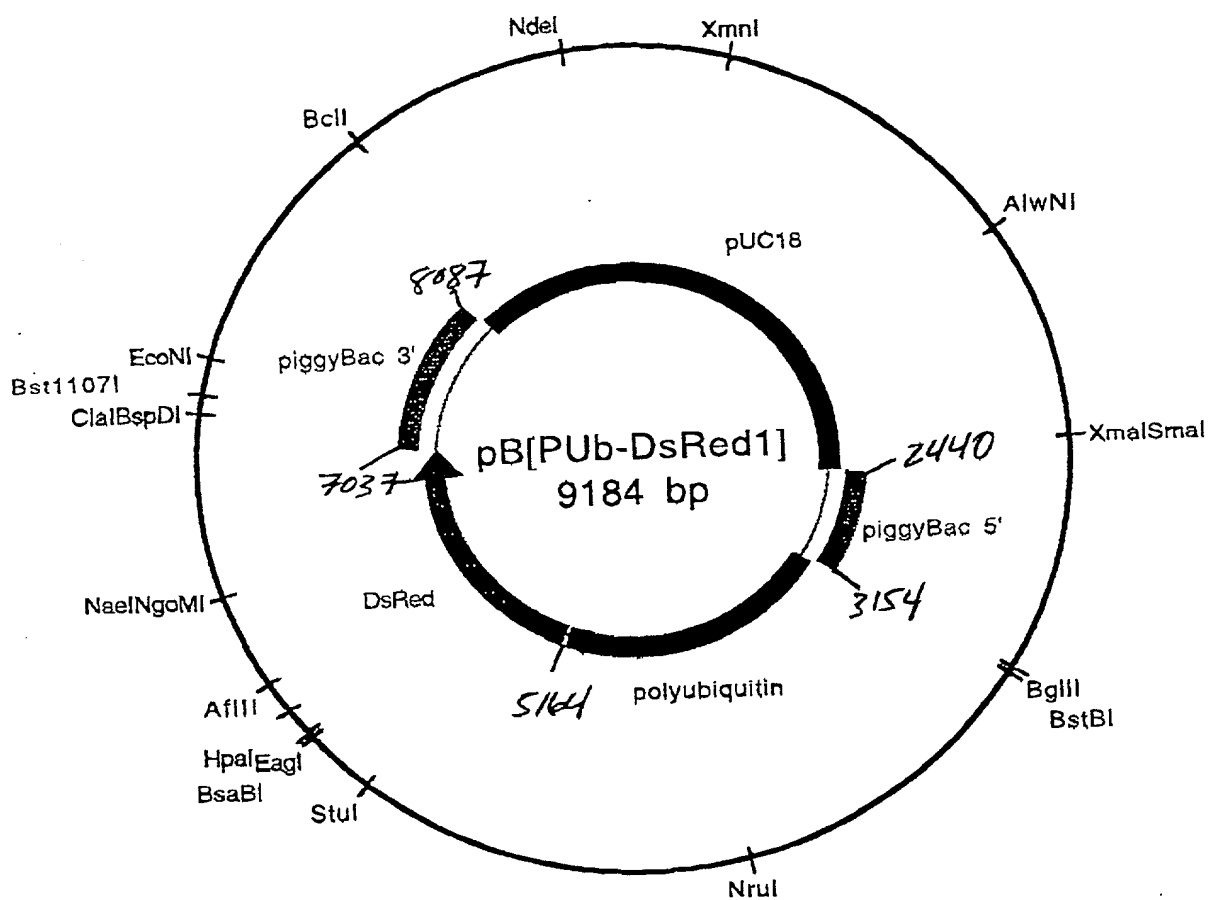


FIG. 11

pB[DsRed1] Transgenic Drosophila

adult

pupa

larva

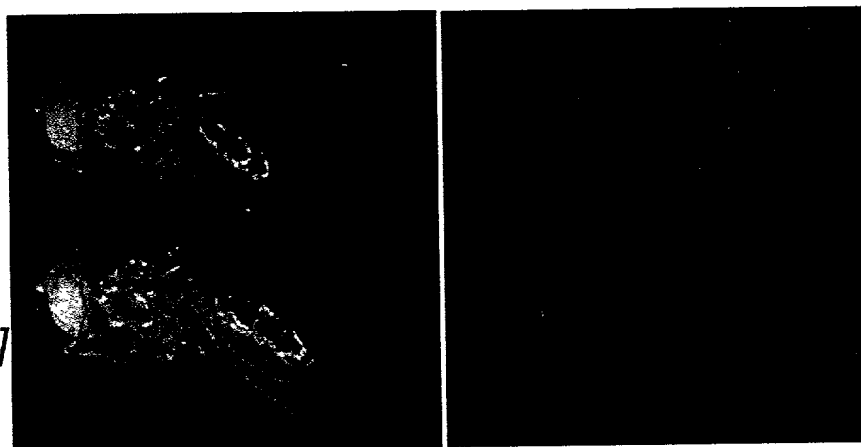
FIG. 12

Expression of DsRed in *Drosophila* transformed
with pB[PUB-DsRed]



white host

Dm[pBDsRed1]
transformant

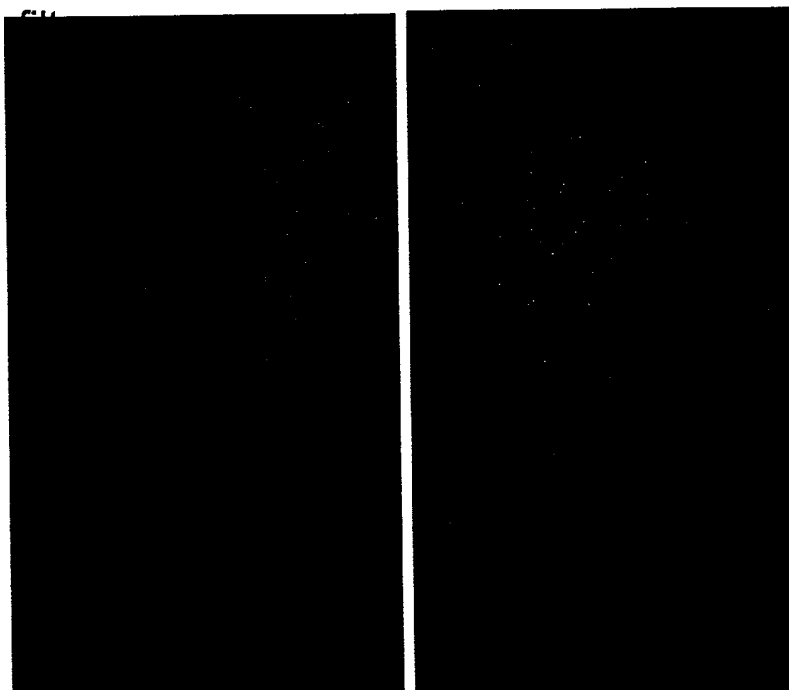


Brightfield

UV - Texas Red filter

Figure 13

Expression of DsRed in Caribfly transformed
with pB[PUB-DsRed1] under a Texas Red



ventral

dorsal

Figure 14

Expression of DsRed in Caribfly transformed with pB[PUB-DsRed1]

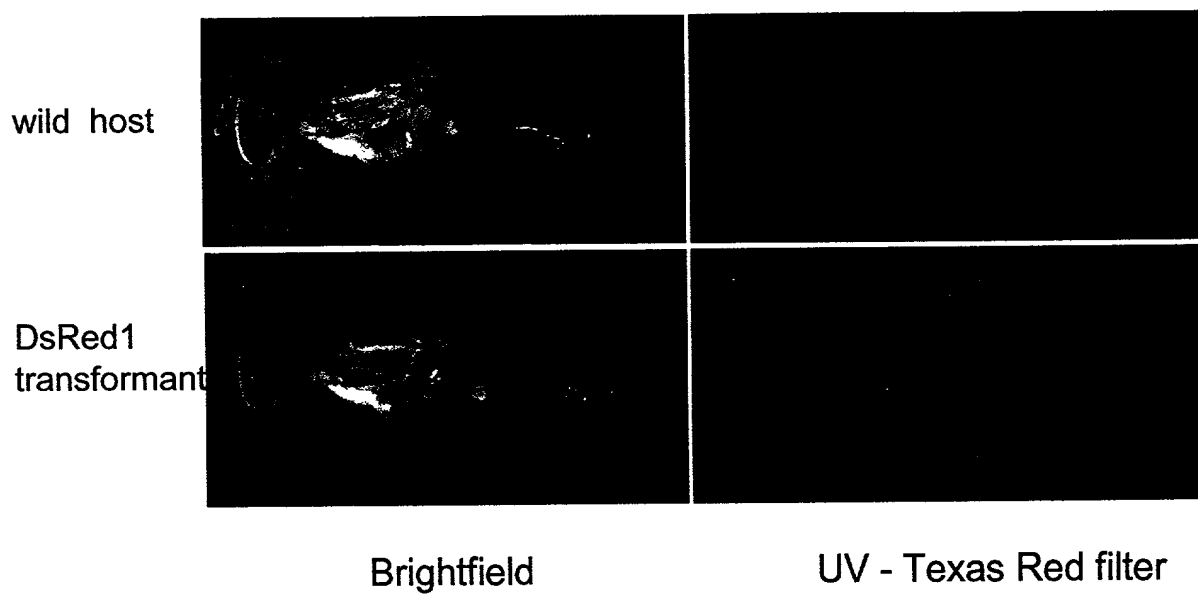


Figure 15